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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,908	06/19/2001	Tetsuya Fukunaga	208555US0PCT	1916

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EXAMINER

LISH, PETER J

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 01/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/831,908

Applicant(s)

FUKUNAGA ET AL.

Examiner

Peter J Lish

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 4 and 5 recite the limitation "the" in "the alkali metal" and "the alkaline earth metal". There is insufficient antecedent basis for this limitation in the claim.

Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 15 states "the catalyst of claim 6", however, claim 6 is drawn toward a method of production. Perhaps "the catalyst prepared by the method of claim 6" is meant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1-2, 4-10, and 12-19 rejected under 35 U.S.C. 103(a) as being obvious over Yasushi (JP 09-131531).

Yasushi discloses a catalyst, for the removal of CO in hydrogen-containing gas, which consists of ruthenium and an alkali metal and/or alkaline earth metal on a fireproof inorganic oxide carrier. The inorganic oxide carrier may be made of at least one selected from among titania, alumina, etc, or may be combinations of these oxides. While a specific combination of alumina and titania is not explicitly disclosed, combinations are allowed for by Yasushi. Additionally, *In re Kerkhoven* (205 USPQ 1069) holds that it is obvious to combine two compositions each of which is taught by prior art to be useful for same purpose in order to form third composition that is to be used for the very same purpose.

The alkali metal may be chosen from the group consisting of K, Cs, Rb, Na, and Li. The alkaline earth metal may be chosen from the group consisting of Ba, Ca, Mg, and Sr. The ruthenium catalyst is applied to the support by contacting the support in catalyst containing solution at between 20-90 °C for between 1 minute and 10 hours [paragraph 0016]. The alkali/alkaline earth metal are also applied to the support by contacting the support in catalyst containing solution at between 20-90 °C for between 1 minute and 10 hours [paragraph 0020]. Regarding claim 7, it would be obvious to one of ordinary skill in the art at the time of invention to apply the catalysts to the carrier simultaneously, given the equivalent treatment processes.

The catalyst is used to remove CO in essentially hydrogen gas, such as reformed gas obtained by reforming the fuel for hydrogen manufacture, and is used for manufacture of the hydrogen content gas for fuel cells [paragraph 0022].

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being obvious over Nishino et al. (USPN 4350613).

Nishino et al. disclose a platinum group catalyst, which may be ruthenium (column 8, line 33), supported on a titania and alumina carrier. The ratio of titania to alumina in the carrier falls between 5.0/95.0 and 90.0/10.0 (column 4, line 67 to column 5, line 1; column 5, lines 50-52). The catalyst is used for the CO purification of exhaust gases. It would be obvious to use a ruthenium catalyst on the titania and alumina carrier, as taught by Nishino.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasushi as applied to claim 2 above, and further in view of Nishino et al as applied to claim 3 above.

Yasushi does not specify a weight ratio of titania to alumina to be used in the carrier of his ruthenium catalyst. Nishino, however specifies the range as described above. It would be obvious to one of ordinary skill in the art at the time of invention to use the carrier with the specific weight ratios of Nishino to support the catalyst of Yasushi as the high-strength carriers of Nishino allow for high performance catalysis using only a small amount of metal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 703-308-1772. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703-308-3837. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-305-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

PL
December 6, 2002

A handwritten signature in black ink, appearing to read 'Stuart L. Hendrickson', written in a cursive style.

STUART L. HENDRICKSON
PRIMARY EXAMINER